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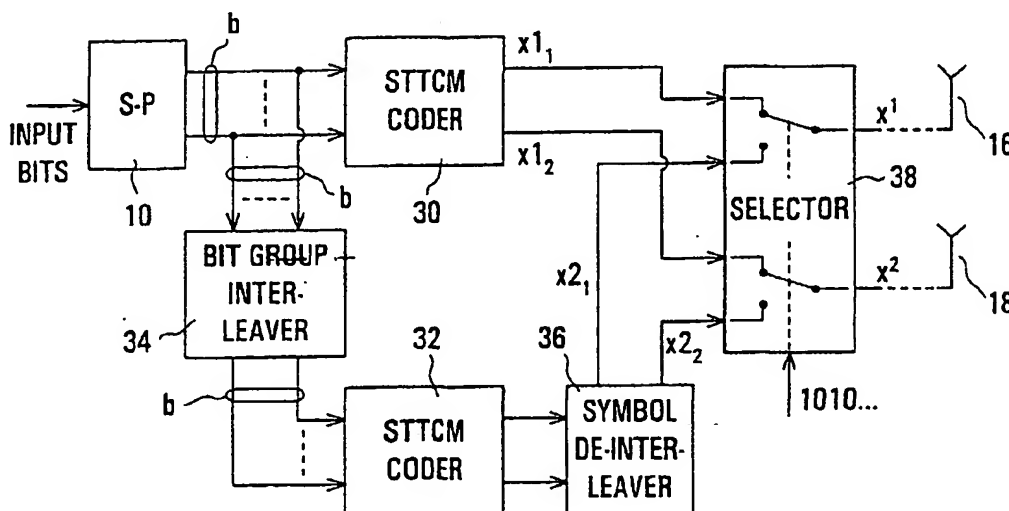
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[Continued on next page]

(54) Title: SPACE-TIME TURBO TRELLIS CODING ARRANGEMENT AND METHOD THEREOF



(57) Abstract: First and second recursive space-time trellis coded modulation (STTCM) coders each produce, in successive symbol intervals, a plurality of T M-PSK symbols from a group of b input bits, where  $M=2^b$ . The groups of b bits are supplied directly to the first coder and via an interleaver to the second coder, whose output symbols are conversely de-interleaved. A selector supplies T symbols from the first coder and T symbols from the de-interleaver alternately in successive symbol intervals to T output paths for T antennas providing transmit diversity. STTCM codes are described for different values of T and M and for fast and slow fading channels.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 01/05130

A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 H04L1/06 H04L1/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L H03M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BAUCH G: "CONCATENATION OF SPACE-TIME BLOCK CODES AND 'TURBO'-TCM"            ICC '99. 1999 IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS. CONFERENCE RECORD. VANCOUVER, CA, JUNE 6 - 10, 1999, IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS, NEW YORK, NY: IEEE, US, vol. 2, 6 June 1999 (1999-06-06), pages 1202-1206, XP000898047            ISBN: 0-7803-5285-8            cited in the application            the whole document</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	1,6

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

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## INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ROBERTSON P ET AL: "BANDWIDTH-EFFICIENT TURBO TRELLIS-CODED MODULATION USING PUNCTURED COMPONENT CODES" IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 16, no. 2, 1 February 1998 (1998-02-01), pages 206-218, XP000741775 ISSN: 0733-8716 cited in the application the whole document	1,6
P,A	EP 1 119 109 A (SAMSUNG ELECTRONICS CO LTD) 25 July 2001 (2001-07-25) abstract figure 1	1,6

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1119109	A	25-07-2001	CN 1306367 A	01-08-2001
			EP 1119109 A1	25-07-2001
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			US 2001010710 A1	02-08-2001

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